DOCUMENT RESUME

ED 047 898 RE 003 352

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TITLE The Use of Structured Tutoring Techniques in Teaching Low-Achieving Six-Year-Olds to Read.
PUB DATE Feb 71
NOTE 14p.; Paper presented at the meeting of the American Educational Research Association, New York, N.Y., Feb 4-7, 1971

EDRS PRICE EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS *Beginning Reading, *Cross Age Teaching, Grade 1, Individual Instruction, Kindergarten Children, Programed Tutoring, Reading Achievement, Reading Readiness, *Reading Research, *Tutorial Programs, *Underachievers, Word Recognition

ABSTRACT

The feasibility of devising a highly individualized reading program for low-achieving 6-year-old children centering on structured tutoring was investigated. The 33 subjects from three schools would enter first grade in the fall and were considered low achievers on the basis of kindergarten testing. Upper-grade elementary students volunteered to tutor on a one-to-one basis and were placed under a supervisor in each school. Each tutor was trained in structured tutoring techniques in teaching the prescriptions which constituted the criteria objectives for each child. At the end of the 6-week period, the children were given a test that measured their achievement of the specified criteria--seven letters, five sight words, eight sounds, eight to ten phonetic words, and five to eight nonsense words. The first-grade teachers in the three participating schools were asked to rank all their pupils on reading ability 3 months after the beginning of the school year. This ranking disclosed that only five of the children in the study were considered to be in the lower one-third of their class in contrast to all 33 having been identified as being in the lower one-third of their kindergarten class. Tables are included. (DH)

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THE USE OF STRUCTURED TUTORING TECHNIQUES IN TEACHING LOW-ACHIEVING SIX-YEAR-OLDS TO READ[1]

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Statement of Problem and Objectives:

Teaching children to read is fast becoming the first priority of most school districts. It goes without saying that the Federal Government's emphasis on reading is stimulating a new interest in the perennial problem of teaching children to read. All too often when large amounts of Federal monies are made available to solve a particular educational problem, the resulting proposed solutions are prohibitive in cost for most school districts, and consequently rarely ever reach fruition.

The prime objective of this study was to investigate the feasibility of devising a highly individualized beginning reading program for low-achieving six-year-olds that would be financially feasible to replicate in any school district.

Previous research has demonstrated the effectiveness of structured tutoring (student tutors are trained to use established principles of learning) in helping low-achieving primary grade children master critical modern math concepts. Structured tutoring utilizes principles of learning which have been identified primarily with programmed instruction in that the tutorial procedures are carefully prescribed, and conform to the basic principles of programmed

[1]Presented at the American Educational Research Association 1971 Annual Meeting, New York City, New York, February 1971.

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instruction, but allows for maximum sensitivity to the individual learning characteristics of the child being taught. Structured tutoring has proven to be a form of individualized instruction that provides a degree of flexibility that has only previously been possible by means of computers. There are two particular features of structured tutoring that make it far superior to previous forms of individualized instruction. First, structured tutoring makes it possible to require and monitor oral responses. Secondly, the cost of implementing a structured tutoring program in a school after initial development cost is nominal.

Reading, more than any other subject, requires individualization with low-achieving students. However, unless individualized reading programs exist that are not financially prohibitive for school districts, it is doubtful that reading instruction for low-achieving students will be individualized.

Procedures: In order to control for major confounding variables, the study was conducted during the summer when the children were not attending school. This assured that the children were not receiving any additional formal reading instruction other than in conjunction with the study.

Three schools in the Provo School District identified children who would be entering first grade in the fall who were considered low-achievers based on their performance in Kindergarten and their test

scores on tests administered in the district. These children were then given an individual criterion-referenced test. This test determined whether or not the child could do the following: (1) name designated letters of the alphabet; (2) read designated sight words; (3) produce the sounds of designated letters and digraphs; (4) read designated words that could be read phonetically; and (5) decode nonsense words composed from designated sounds.

The criterion-referenced pretest established the following; (1) seven children meet the specified criterion of being able to name designated letters; (2) three children met the specified criterion of being able to read designated sight words; (3) none of the children met the specified criterion of being able to produce the sounds of designated letters and digraphs; (4) none of the children could read the phonetic words; and (5) none of the children could decode the nonsense words.

In each school, lists were obtained of upper-grade elementary students who expressed a willingness to be tutors. From these lists, one tutor was randomly selected for each six-year-old identified. One aide was hired and trained to supervise the reading program in each school. The supervisors were responsible for all aspects of the reading program. These responsibilities included: (1) training student tutors in handling the following types of prescriptions: (a) teaching names of letters; (b) teaching sight words; (c) teaching sounds of letters

and digraphs; (d) teaching the child to blend sounds; and (e) teaching the child how to decode words. In each instance the tutors were trained to use validated structured tutoring techniques commensurate with each instructional role: (2) arranging the schedule for the children being tutored; (3) make prescriptions for the individual children; (4) recording each tutoring activity; (5) testing individual learners for mastery; (6) maintain individual profile sheets for each child being tutored; and (7) monitoring the student tutors to assure that they were following the prescribed tutorial procedures.

The initial instruction each child received was specific to his needs based on his performance on the diagnostic pre-test. The instruction of each child was systematically monitored so the child was not allowed to move from one segment of the instruction to the next until they had achieved mastery of the preceding segment of instruction. Individual profiles were maintained on each child which depicted a summary of the child's performance on the pre-test and the date specific criterion were achieved. In addition, the supervisors maintained an instructional log on each child. This log provides a description of the instruction the child received each day and pertinent comments regarding the performance of the child.

The tutors were trained to work with an individual child on a specific perscription until they felt the child had mastered the prescription.

When the tutors felt the child had mastered the specific prescription, they would report to their supervisor. The supervisor would check the child for mastery. If the child demonstrated mastery of the prescription, the supervisor would give the student tutor another prescription for the child. The supervisor would allow the child to place a stick-star on the child's profile sheet under each of the specific criterion the child had mastered. In addition to this form of reward, the student tutors were trained to write notes home to the parents of the child saying the child had learned a particular letter sound and praising his work.

The children were scheduled for instruction five days a week and were tutored by the student tutors for approximately fifteen to twenty minutes for six weeks.

Results: At the conclusion of the study each child was given a criteria-referenced test that measured the child's mastery of the specific criterion established for the study. The tables on the following three pages show the pretest scores, posttest scores, learning gains, attendance, and a summary of criterion achievement for each school.

PROVOST SCHOOL

	Pre-Test					Post-Test					Increase					Attendance
	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words	Days Attended (out of 32)
Criterion	7	5	8	8/10	5/8	7	5	8	8/10	5/8						
NAME																
Jess Christen	3	0	0	0	0	7	5	8	10	8	*	4	5	8	10	8	29
Jeff Conahen	2	0	0	0	0	7	5	8	10	4		5	5	8	10	4	29
Lynda Coombs	3	0	2	0	0	7	5	8	10	8	*	4	5	6	10	8	29
Russell Davis	3	0	0	0	0	7	5	8	10	6	*	4	5	8	10	6	29
Diane Heudier	2	0	0	0	0	7	5	8	10	5	*	5	5	8	10	5	29
Brent Honeycutt	5	0	2	0	0	7	5	8	10	0		2	5	6	10	0	24
Phill Hoover	2	0	2	0	0	7	5	8	9	6	*	5	5	6	9	6	29
Steven Johnson	2	0	0	0	0	7	5	8	6	0		5	5	8	6	0	23
Paul Kahni	0	0	0	0	0	7	5	8	10	5	*	7	5	8	10	5	27
Eric Nielsen	0	0	0	0	0	7	5	8	8	5	*	7	5	8	8	5	25
Sheri Tyler	3	0	0	0	0	7	5	8	10	8	*	4	5	8	10	8	29
Susan White	4	0	2	0	0	7	5	8	10	6	*	3	5	6	10	6	27
AVERAGE	2.4	0	.7	0	0	7	5	8	9	5		4.6	5	7	9	5	27

* Achieved mastery for each prescription made.

WASATCH SCHOOL

	Pre-Test					Posttest					Increase					Attendance
	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words	Days Attended (out of 32)
Criterion	7	5	8	8/10	5/8	7	5	8	8/10	5/8						
NAME																
Dereck Gleason	7	0	3	0	0	7	5	8	10	4	0	5	5	10	4	24
Paul Gardner	3	0	0	0	0	7	5	8	7	4	4	5	8	7	4	31
Thomas Bowers	3	0	0	0	0	7	5	4	0	0	4	5	4	0	0	22
Zachery Poulter	3	0	0	0	0	7	5	8	0	0	4	5	8	0	0	30
David Nelson	3	0	0	0	0	7	5	8	8	2	4	5	8	8	2	29
Guy Mulberry	2	0	0	0	0	7	5	8	10	8	5	5	8	10	8	29
Rex Allen	3	0	0	0	0	7	5	2	0	0	4	5	2	0	0	19
Emron Tripp	3	0	0	0	0	7	5	8	9	6	4	5	8	9	6	29
Maylyn Van Fleet	4	0	1	0	0	7	5	6	0	0	3	5	5	0	0	24
Shelly Poulson	1	0	0	0	0	7	5	8	0	0	6	5	8	0	0	30
George Merrill	0	0	0	0	0	7	5	8	10	5	7	5	8	10	5	25
Ukiah Dean Elmore	7	0	0	0	0	7	5	8	7	4	0	5	8	7	4	24
AVERAGE	3.3	0	.3	0	0	7	5	7	5	2.7	3.5	5	6.6	5	2.7	26.3

*Achieved mastery for each prescription made.

ROCK CANYON SCHOOL

	Pre-test					Posttest						Increase						Atten-dance
	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words	Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words		Letters	Sight Words	Sounds	Phonetic Words	Nonsense Words		Days Attended (Out of 32)
Criterion	7	5	8	8/10	5/8	7	5	8	8/10	5/8								
NAME																		
David Dillman	4	0	1	0	0	7	5	8	3	0		3	5	7	3	0		22
Lily Dollacker	7	5	6	1	0	7	5	8	10	8	*	1	0	2	9	8		29
Shelly Evans	0	0	0	0	0	7	5	7	0	0	*	7	5	7	0	0		25
Andrew Howard	6	0	4	0	0	7	5	8	0	0	*	1	5	4	0	0		13
Jason Myers	1	0	0	0	0	7	5	2	0	0		6	5	2	0	0		24
Gary Nordgren	7	5	5	0	0	7	5	8	10	8	*	0	0	3	10	8		28
Joshua Myers	7	0	0	0	0	7	5	8	10	0	*	0	5	8	10	0		23
Robert Perry	7	5	5	0	0	7	5	8	10	4		0	0	3	10	4		28
Dardree Smith	7	0	3	0	0	7	5	8	0	0	*	0	5	5	0	0		23
Average	6	1.6	2.6	0	0	7	5	7	4.4	2		2	3.3	4.5	4.6	2		23.8

* Achieved mastery for each prescription made.

SUMMARY OF CRITERION ACHIEVEMENT

PROVOST

CRITERION OBJECTIVES	RECEIVING PRESCRIPTION	NUMBER ACHIEVING CRITERION WHO RECEIVED PRESCRIPTION	PERCENT ACHIEVING CRITERION WHO RECEIVED PRESCRIPTION
Name Letters	12 out of 12	12 out of 12	100%
Read Sight Words	12 out of 12	12 out of 12	100%
Producing Sounds	12 out of 12	12 out of 12	100%
Read Phonetic Words	12 out of 12	11 out of 12	92%
Decode Nonsense Words	10 out of 12	9 out of 10	90%

WASATCH

CRITERION OBJECTIVES	NUMBER RECEIVING PRESCRIPTION	NUMBER ACHIEVING CRITERION WHO RECEIVED PRESCRIPTION	PERCENT ACHIEVING CRITERION WHO RECEIVED PRESCRIPTION
Name Letters	12 out of 12	12 out of 12	100%
Read Sight Words	12 out of 12	12 out of 12	100%
Produce Sounds	12 out of 12	9 out of 12	75%
Read Phonetic words	7 out of 12	5 out of 7	71%
Decode Nonsense Words	7 out of 12	3 out of 4	75%

ROCK CANYON

CRITERION OBJECTIVES	NUMBER RECEIVING PRESCRIPTION	NUMBER ACHIEVING CRITERION WHO RECEIVED PRESCRIPTION	PERCENT ACHIEVING CRITERION WHO RECEIVED PRESCRIPTION
Name Letters	9 out of 9	9 out of 9	100%
Read Sight Words	9 out of 9	9 out of 9	100%
Produce Sounds	9 out of 9	7 out of 9	77%
Read Phonetic Words	7 out of 9	4 out of 7	57%
Decode Nonsense Words	3 out of 9	2 out of 3	66%

Three months after the beginning of the school year the first-grade teachers, in the three schools from which the children were selected were asked to rank their students based on their reading ability. The teachers were instructed first to rank a child as either being in the upper fifty per cent of the class or the lower fifty per cent, and then to identify the children who were in the upper and lower one-third of the class in reading. At no time were the first-grade teachers told which children had participated in the reading program during the summer.

All seven children who achieved criterion for each of the five objectives at the Provost Elementary School were ranked by their teachers as being in the top fifty per cent of the class in reading. Further checking substantiated that one of the children is ranked by the teacher as being the top reader in the class. Two of the children are ranked in the top one-third of their class.

Of the five children who did not achieve criterion for each of the five objectives at the Provost Elementary School, one* was ranked in the top fifty per cent and four in the lower fifty per cent of their classes. Of the four, two were ranked by their teachers as being in the lower one-third of their class.

Of the three children who achieved criterion for each of the five objectives at the Wasatch Elementary School, two had moved and no longer attend the school, and one was ranked by his teacher as being in the top fifty per cent of the class in reading.

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*This child achieved criterion on four of the five objectives and came very close to criterion on the fifth objective.

None of the children who did not achieve criterion on the five objectives at the Wasatch Elementary School were ranked by their teachers as being in the upper fifty per cent of the class in reading. Of the nine, two were ranked as being in the lower one-third of the class in reading.

Both children who achieved criterion for each of the five objectives at the Rock Canyon Elementary School have subsequently moved out of the state. Consequently, it was not possible to determine how their reading ability compares with other first-graders.

None of the six children who did not achieve criterion on the five objectives at the Rock Canyon Elementary School were ranked by their teachers as being in the upper fifty per cent of the class in reading. Of the six children, one was ranked as being in the lower one-third of the class in reading.

An effort was made to collect some subjective data on the reaction of the students to the experience and the reaction of the parents of both the students and tutors to the reading program. The response of the tutors and parents was extremely positive. The tutors were asked to respond to questions like "Have you enjoyed being a tutor this summer?", and "Would you like to be a tutor next summer?" The parents were asked to respond to questions like "In your opinion, has your child enjoyed the summer reading program?" "Please explain as specifically as possible why you responded the way you did to the previous question." "Did you find that your child was helped by attending the summer reading program? (Please be as specific as possible)."

Every tutor indicated they had enjoyed the experience. With few exceptions, the tutors indicated they would like to be a tutor again next summer. Without exception the parents felt the program had benifited their children and were able to cite specific evidences of the gains.

Many of the parents of the children being tutored expressed their surprise to find their children eager to go to the school each day. This was evidenced by the children asking repeatedly if it was time to leave for the school. This point is further evidenced by the consistent attendance of most of the children.

Of particular significance was the willingness of a group of parents to offer to pay for the support of the reading program one additional week beyond the concluding time that was designated for the program.

Discussion: Using student tutors who are trained in the use of validated tutoring techniques to teach low achieving six-year olds to read seems feasible based on the results of the study. All thirty-three children achieved the criterion of being able to name designated letters. Every child achieved the criterion of being able to read designated sight words. Twenty-eight of the children achieved the criterion of being able to produce the sounds of designated letters and digraphs. Nineteen of the children achieved the criterion of being able to read designated phonetic words. Fourteen of the students achieved the criterion of being able to read five out of eight nonsense words.

The ability of the students to read phonetic and nonsense words is even more significant when considered in light of the fact that

several of the students did not receive instruction on blending and decoding. The tutors did not receive prescriptions to work with the child on blending and decoding until they had achieved criterion on each of the preceding objectives. As a result of slower learning rates, several children did not achieve criterion on all preceding objectives, so consequently they never received individualized help with blending and decoding.

A large majority of the students who received any degree of individualized help with blending and decoding came very close to criterion or achieved criterion on the final two objectives. When the results are viewed in terms of whether or not the students received the various prescriptions, the results are fairly conclusive in support of the basic premises that were being investigated.

The potential of this approach to individualizing reading instruction is further evidenced by the fact that of thirty-three children that were identified as being in the lower one-third in terms of achievement and reading readiness at the conclusion of their kindergarten experience, only five of the children were ranked by their first-grade teachers as being in the lower one-third of their class in reading.

Another significant point comes to light when you compare the achievement of the students at Rock Canyon with the other two schools. The entering behavior of the children at Rock Canyon was considerable higher, and yet the over-all achievement of the children was lower. The aide, hired to supervise the reading program at Rock Canyon, had been involved in another tutorial project previously and had formed some definite opinions about

tutoring which were not commensurate with structured tutoring. consequently, she did not follow the prescribed program nearly as closely as the other two aides.

Even though specific data was not collected, the programs were monitered throughout the summer in an effort to assure the prescribed program was being followed. In light of the final data, it is of special interest to note that the Provost School was always ranked first, and the Wasatch Clinic second. Repeatedly, concern arose regarding the Rock Canyon program because of the aide's reluctance to follow the prescribed program.